

actually helped us—[it] took a lot of stuff that had settled on the bottom, came up high enough, and left fast enough so it may give us some help,” he says. “But then in a few years, it’ll fill back in. A hurricane can’t hurt you; long-term, [hurricanes] have been around forever. Hopefully, it took more stuff off the bottom than it put on the bottom. Next June or July will tell.

NAS Says EMFs No Hazard

A new report by a committee of the National Academy of Sciences paints a rosy picture of household electromagnetic fields (EMFs), concluding that “no conclusive and consistent evidence” suggests a human-health hazard, and that, in fact, strong, low-frequency pulsed magnetic fields may actually help heal broken bones.

But the 31 October 1996 report also calls for additional research to answer lingering questions about EMFs, such as why intense magnetic fields seem to speed the development of breast cancer in laboratory animals subjected to chemical carcinogens.

Epidemiological studies since 1979 have shown a “weak but statistically significant” (1.5-fold) increase in leukemia among children living in homes exposed to high-level EMFs, the NAS report notes. Most of these studies can be called into question, however, because they rely on rough estimates of interior exposure levels based on outdoor wiring configurations or wire codes, said NAS committee chair Charles F. Stevens, a professor and investigator with the Howard Hughes Medical Institute at Salk Institute in La Jolla, California. Epidemiology studies have also failed to rule out other potential risk factors for childhood leukemia, such as the proximity of children’s homes to high-traffic areas, Stevens added.

“There is not one shred of evidence that it’s the [EM] fields that are causing this association with childhood leukemia,” Stevens said. “In all the animal studies, there’s not one case where we know that the effects that have been seen are detrimental versus beneficial. There’s no evidence that any effects take place in humans.”

At the Midwest Research Institute in Kansas City, Missouri, Senior Advisor Charles Graham said people exposed to magnetic fields at levels as low as 12 milligauss (a range common inside homes) experience heart-rate changes. “We do have reproducible effects,” Graham said of his research, but he added that such effects are “not [health] risks, necessarily. . . . We don’t know if they’re risks or not.”

In fact, the NAS report says, EMF studies show detrimental health effects only when exposure levels are 1,000–100,000

times stronger than those found in a typical residential setting. Overall, the report says, no evidence points to household EMFs as a cause for cancer, adverse neurobehavioral effects (such as schizophrenia or learning disabilities), or reproductive and development disorders. Though preliminary studies suggested that EMFs might increase cancer risks by inhibiting the production of the hormone melatonin, Stevens said, subsequent research failed to support this theory. Moreover, Graham said, EMFs seem to suppress melatonin production only in animals, not in humans.

A number of recent studies, including work by NAS committee member Maria A.

EHPnet

Taking Inventory of Toxics

By providing direct access to information that otherwise would be difficult to obtain, the Internet has enabled many people to take an active role in investigating and solving their problems. With the creation of the Toxic Release Inventory System (TRIS), the EPA has expanded this ability by making it much easier for Americans to track and eliminate pollution. The TRIS page on the World Wide Web, located at http://www.epa.gov/enviro/html/tris/tris_overview.html, provides information to anyone with Internet access on the more than 300 toxic substances that the EPA tracks. Industries that release any of these chemicals must submit a Toxic Release Inventory to the EPA each year. The data from these forms are compiled into a searchable database that can be accessed by selecting the TRIS Queries link on the TRIS home page.

The TRIS search form allows users a great deal of flexibility in deciding how their search will be conducted. With the top half of the form, users can specify what criteria they want matches to fulfill—whether they want the TRIS to display facilities carrying a certain name or identification, facilities within a certain geographical region, facilities of a certain industrial classification, or facilities that emit a certain chemical. With the bottom half of the form, users can dictate how the results will look and what information TRIS will display. For example, if a user wanted to know if industries were releasing mercury into waters near a city, they could simply specify the city, county, or zip code in the geography and specify “mercury” in the Chemical Search Option field. After picking option eight to display the search results by “Amounts and Names of Chemicals Released to Surface Waters,” users will receive a nicely formatted report of all the industries releasing mercury into the waters in that area. The same search could be done using “sulfur dioxide” in the Chemical Search Option field and displaying results by Amounts and Names of Chemicals Released to Air for information on acid rain. For other searches, users may want to display results with the Facility Business and Contact Information option. For further information on how to use the TRIS, a User’s Guide link is provided on the query page. Information on the timeliness and accuracy of TRIS data can be obtained through links on the home page.

When searching TRIS, it is sometimes hard to specify chemicals since many have more than one name. A helpful way to avoid this problem is to search for a chemical using the number assigned to it by the Chemical Abstracts Service (CAS). To do this, users must select the appropriate option from the pull-down menu over the Chemical Search Option field. CAS numbers can be obtained from a helpful list compiled by Genium Publishing at <http://www.genfo.com/cgi-bin/cll-search.cgi?md=y>.

The Environmental Systems Research Institute provides a more user-friendly way to search for Toxic Release Inventory information at <http://maps.esri.com/toxic.htm>. This search form does not allow for as much flexibility as the EPA form, and the data here are not as current, but the program returns the results as points on a street map of the area in question. The ability of average citizens to see how close polluters are to where they live, work, and play is a novel phenomena and perhaps the first step to solving some of the problems of toxic pollution.



**Toxic Release
Inventory System (TRIS)**

Stuchly, have shown “a slightly earlier development of tumors” among rodents exposed to chemical carcinogens as well as EMFs, the report says. But such co-promotional effects “have not been replicated,” said Stuchly, a professor at the University of Victoria in British Columbia. Nevertheless, the report says, researchers should reevaluate copromotional studies—especially the work of German researchers (W. Löschner and colleagues), who reported a 50% increase in the growth rate of mammary tumors among rats exposed to 50-Hz magnetic fields after receiving oral doses of the carcinogen DMBA.

Studies of possible copromotional effects